

U.S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS
HOOPA INDIAN RESERVATION
SUMMER 1958
RECONNAISSANCE SURVEY

Forest insect conditions on the western part of the Hoopa Indian Reservation were surveyed by the writer on August 27 and September 15 and 17, 1958. These reconnaissances were made both as part of the Station's routine forest insect survey program and also in response to a detection report submitted by W. Showalter of the Klamath National Forest, dealing with scattered top-killing in both pine and fir. The August 27 trip was made in company with Hoopa Foresters E.I. Viers and Everett Ellison, and the September 17 survey with Viers. The findings were talked over informally on September 17 with Viers, Hoopa Resident Forester Art Lusher, and Foresters Ted Holt and J.F. Morelock from the Sacramento Area Office. This report essentially records what was discussed then.

Insect and Host Species Involved

The reservation is located in the Douglas-fir region of northwestern California, on the Trinity and Klamath Rivers in Humboldt County. The timber type is predominantly Douglas-fir, with lesser volumes of ponderosa and sugar pine, true firs and redwood. The pines and Douglas-fir are the species most affected by current insect activity and are the only ones considered in this report. Current insect damage in the other species appears to be negligible.

Three separate situations were encountered: Douglas-fir beetle, Dendroctonus pseudotsugae Hopk., in Douglas-fir; the mountain pine beetle, D. monticolae Hopk., in sugar pine; and top-killing in Douglas-fir and ponderosa pine. It is believed that a combination of factors is involved in the top-killing.

Status and Scope of Infestations

The Douglas-fir beetle became epidemic in northwestern California in 1953^{1/}, but since 1955 the infestation has remained relatively innocuous in most areas. At Hoopa, loss this season is occurring at a little higher rate than normal. A number of infested groups were seen, each of which comprised

^{1/} Hall, R.C. et al. 1954. Douglas-fir Beetle, Six Rivers and Klamath National Forests, July 1954. Reconnaissance Survey, CF&RES, Berkeley, Calif. 7 pp (processed).

some 8-10 trees. In the Pine Creek drainage, 1957 loss in and adjacent to a recent burn was very heavy; several hundred trees were killed. Many of these trees had been fire-damaged in varying degrees. However, little current (1958) infestation was observed here.

On Sugar Pine Mountain, in the southwestern part of the reservation, a logging operation last year covered some 400 acres. The timber was primarily sugar pine. Around 50 residual trees, mostly in the 18-24 inch d.b.h. class, were heavily attacked this spring by the mountain pine beetle.

Infested trees were of two categories - green and faded; only two green infested trees were found. The faded trees are probably first generation summer attacks, from which most of the emergence has already taken place, and the green ones are late-summer attacks. Brood stages were (up to 6 feet on the boles) late larvae, pupae, and new adults in the faded trees, and young larvae in the green trees. Brood production as indicated by emergence holes appears to have been light in the earlier infested trees.

North along Pine Ridge from Sugar Pine Mountain, the top 4-6 feet of a number of Douglas-firs and ponderosa pines have been killed. This condition has also been observed near Willow Creek and up Bluff Creek this season. Examination of one of the Douglas-fir tops showed it to be lightly infested with flatheaded borers (larvae of the beetle family Buprestidae).

Discussion

In the Coast Range, epidemics of the Douglas-fir beetle are usually triggered by some catastrophic event such as windthrow, and do not persist more than a year or so. This general rule was illustrated in the 1954-55 situation which resulted from extensive blowdown. Logging slash is not a hazard from the Douglas-fir beetle standpoint.

The Hoopa Douglas-fir beetle situation is not particularly alarming this year, but there are two lines of action which would result in utilization of otherwise decaying timber and might have some insect-control benefits. First is salvage within a year of the killed timber in the Pine Creek area, before extensive tunneling by wood-boring insects takes place. This is strictly a salvage operation. The second approach would be to initiate a program of salvage of scattered group-kills in Douglas-fir as they show up. This sort of activity is practical if an operator able to do the job can be found and the necessary administrative arrangements can be worked out. However, where it has been done, considerable volumes of otherwise lost timber have been utilized and insect control benefits may well have come about as currently infested logs were hauled out of the woods.

The sugar pine situation is not believed to be too serious. While aggressive early in the season, the infestation now shows a lessening in intensity. This is often characteristic of post-logging infestations in sugar pine, and we do not feel that there will be much further loss. However, it should be watched closely next spring for any signs of additional activity.

The top-killing appears to be a complex situation, in which insects (particularly in the Douglas-fir) are probably not the primary cause. Location of the damage on ridgetops strongly suggests that adverse temperature-moisture conditions may be involved, although extreme conditions did not prevail last winter. This type of damage to trees has been reported previously in pine 2/, 3/, but not to our knowledge in Douglas-fir.

It is improbable that this damage will continue another season, and we do not feel that the already-affected trees are weakened to the point where other insects will move in and finish them off.

Berkeley, California
October 14, 1958

Robert E. Stevens,
Entomologist

2/ Salman, K.A. 1938. An unusual type of top-kill of ponderosa pine. Jour. Econ. Ent. 31(5): 613-616.

3/ Wagener, Willis W. 1949. Top dying of conifers from sudden cold. Jour. For. 47(1): 49-53.